UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to
OSB1998-0077

December 18, 1998

Don Ostby
Forest Supervisor
Umpqua National Forest
P.O. Box 1008
2900 Stewart Parkway
Roseburg, Oregon 97470

Re: Section 7 consultation on action affecting Umpqua River cutthroat trout and Oregon Coast coho salmon

Dear Mr. Ostby:

This responds to a request for reinitiation of consultation on an action that you feel is "likely to adversely affect" (LAA) Umpqua River cutthroat trout (UR cutthroat). In an September 22, 1998 letter, you requested that Endangered Species Act (ESA) consultation be reinitiated on the proposed Little River Demonstration of Ecosystem Management Options timber sale (Little River DEMO). The Umpqua National Forest (UNF) initiated consultation on Little River DEMO in a May 8, 1997 letter and received a July 22, 1997 Biological Opinion (BO) on the action. This BO was one of three that were invalidated by U.S. District Court Judge Rothstein in her April 28, 1998 ruling on U.S. Forest Service/Bureau of Land Management (BLM) consultations in the Umpqua River basin.

Your September 22, 1998 submission is intended to supplement the Biological Assessment (BA) on Little River DEMO provided with your May 8, 1997 letter, and you believe that your submissions on these actions respond to the perceived shortcomings identified in the litigation. The supplemented BA and other information you provided describe the environmental baseline and the effects of the action. We will address the action in this letter, the purpose of which is to document our biological opinion (BO) that the proposed actions are not likely to jeopardize the continued existence of the potentially affected anadromous salmonid species listed under the ESA, as explained below. This consultation on UNF actions is conducted under section 7(a) (2) of the ESA and its implementing regulations, 50 CFR 402.

The UR cutthroat (*Oncorhynchus clarki clarki*) was listed as endangered under the ESA by the NMFS on August 9, 1996 (61 FR 41514). Critical habitat for this species was designated on January 9, 1998 (63 FR 1388). The OC coho salmon (*O. kisutch*) and OC steelhead trout (*O. mykiss*) Evolutionarily Significant Units (ESUs) were proposed as threatened under the ESA by NMFS

on July 25, 1995 (60 FR 38011) and August 9, 1996 (61 FR 41541), respectively. The OC coho and OC steelhead ESUs were reclassified as candidates for listing under the ESA by NMFS on May 6, 1997 (62 FR 24588) and March 19, 1998 (63 FR 13347) respectively, but the OC coho was subsequently listed as threatened on August 10, 1998 (63 FR 42587). Because of the OC coho listing, we have considered this species simultaneously along with UR cutthroat in this consultation. This is because the NMFS has adopted a habitat-based "jeopardy" analysis ("Biological requirements and status..."[NMFS 1997d], "Application of Endangered Species Act standards to..." [NMFS 1997a] and the NMFS Biological Opinion and Conference Opinion on continued implementation of Land and Resource Management Plans of several National Forests and the Resource Management Plans of several BLM Districts [hereafter referred to as the LRMP/RMP Opinion] dated March 18, 1997 [NMFS 1997b]), and OC coho habitat is completely overlapped by that of UR cutthroat in these proposed actions.

UNF personnel made the effects determinations in the BA following procedures described in NMFS (1997a, 1997b, and 1997d). The effects of the action proposed in the BA were evaluated by UNF biologists at the project scale using criteria based upon the biological requirements of UR cutthroat and other potentially affected anadromous salmonids and the Aquatic Conservation Strategy (ACS) objectives of the Northwest Forest Plan (NFP, USDA and USDI 1994). The UNF biologists also evaluated the likely effects of the proposed action on the watershed scale and in the long-term, in the context of watershed processes. The Level 1 streamlined consultation team for the UNF has defined "long-term" for ESA consultation purposes as about a decade, while short-term effects would occur for a lesser period, most typically a few months to a few years.

The Level 1 streamlined consultation team for the UNF met on June 23, 24, 26, and 29, 1998 to review the UNF's effect determinations and documentation of ACS consistency for Little River DEMO. The team concurred with the ESA effects determinations, but did not concur with the ACS consistency analysis. Because of their non-concurrence, the Level 1 team elevated the matter to the UNF Level 2 team in a memorandum dated June 30, 1998 and provided the rationale for the elevation in a memorandum dated July 2, 1998. In a September 21, 1998 memorandum, the Level 2 team documented their conclusion that the proposed Little River DEMO project would not prevent attainment of the ACS.

Proposed Action

The "proposed action" would occur in the Little River fifth field hydrologic unit code[1] (HUC) of the North Umpqua River in Douglas County, Oregon. Specifically, Little River DEMO is proposed for the Upper Little River sixth field HUC and the Upper Emile seventh field HUC of the Little River watershed. An Environmental Impact Statement (EIS) and other documents (which were appended to the UNF's BA) have detailed information on the action, but brief summaries are provided below.

In Little River DEMO, a component of the regional DEMO study, the UNF proposes to harvest 32 acres of old-growth timber in the Upper Little River sixth field HUC and 128 acres of old-growth timber in the Upper Emile seventh field HUC. The regional DEMO study examines the effects of partial harvest prescriptions that maintain various levels of tree retention on biological, social, and economic considerations at four sites in the Umpqua National Forest and four additional sites in the Gifford Pinchot National Forest. Additional information on the regional study is available in the EIS. Little River DEMO also provides alternative timber volume to replace Coast Range timber under contract under the 1995 Rescission Act. Varying harvest prescriptions would be applied to each of five 32-acre units of Little River DEMO, and a sixth unit (Unit 1) would remain unharvested as a control.

In Unit 2, a 75% retention prescription would be applied in which three 2.5-acre circular areas would be harvested. All merchantable timber would be removed in the harvest areas. In Unit 2, as well as all other harvest units, existing snags (where not a safety hazard) and down wood would be left on site, and all green non-merchantable timber would be left standing. An additional 2.6 dominant or codominant green trees per harvested acre would be left in all units to provide for future snags and large wood (these trees would be killed and left standing after the harvest). Approximately 2 acres of the riparian reserve (RR) of an intermittent non-fishbearing stream would be harvested, including a headwall. Unit 2 is located in the Upper Little River sixth field HUC.

In Unit 3, a 40% retention prescription would be applied in which dominant and codominant leave trees are evenly distributed across the unit, with about 35 to 45 feet of space between tree trunks. Approximately 1.4 acres of the RR of an intermittent non-fishbearing stream would be harvested. Units 3, 4, 5, and 6 are located in the Upper Emile seventh field HUC.

---

[1] Stream drainages can be arranged in nested hierarchies, in which a large drainage is composed of smaller drainages. The UNF uses a system in which these drainages are numbered in a computer data base for analytical purposes. The numerical identifier of a particular drainage in this data base (which is located in a specific column or "field" in the data base) is called its hydrologic unit code, or HUC. This HUC increases with decreasing drainage area, thus a fourth field HUC (such as the North Umpqua River) is composed of several fifth field HUCs (such as the Little River, Steamboat Creek, etc.), and so on. The Northwest Forest Plan determined that the scale for Watershed Analyses should be 20 to 200 square miles, which often corresponds to a fifth field HUC.

In Unit 4, a 40% retention prescription would be applied in which the leave trees would be aggregated in five 2.5-acre circular patches. Within the portion of the unit to be harvested, 2.6 green trees per acre would be retained. No harvest would occur in the leave patches. Approximately 3.3 acres of the RR of an intermittent non-fishbearing stream would be harvested.

In Unit 5, a 15% retention prescription would be applied in which dominant and codominant leave trees are evenly distributed across the unit, with about 70 feet of space between tree trunks. Approximately 9.7 acres of the RR of one fish-bearing and three intermittent non-fishbearing streams would be harvested.

In Unit 6, a 15% retention prescription would be applied in which the leave trees would be aggregated in two 2.5-acre circular patches. Within the portion of the unit to be harvested, 2.6 green trees per acre would be retained. No harvest would occur in the leave patches. Approximately 0.2 acres of the outer edge of the RR of an intermittent non-fishbearing stream would be harvested.

Helicopter-yarding has been proposed for all five of the units. This would require the construction of two 2-acre landings and the use of an existing landing, but building the new landings would not require harvest of old-growth or disruption of RR. All large slash (greater than 10 cm in diameter) would be removed from the units by helicopter, while smaller slash would be hand-piled and burned. All harvested areas would be replanted. No new roads would be constructed, but 18 miles of existing road would be stormproofed (meaning that the water dispersion ability of the roads would be improved and long-term sediment delivery reduced resizing at least one culvert to pass a 100-year flood events, adding additional drainage structures to reduce stream channel extension, and reshaping and resurfacing, when necessary). In addition, about 800 feet of oversteepened fill slopes that have the potential to be delivered to streams would be removed. Also, about 7 miles of road would be decommissioned, half of which would be in RR. Decommissioning includes the following measures (which would not leave a driveable surface): removing culverts and reshaping stream channel crossings (including removal of fill), ripping and vegetatively restoring road surfaces, and recontouring the road prism to natural hillslopes.

Biological Information and Critical Habitat

The biological requirements (including the elements of critical habitat) of each of the ESUs are discussed in the LRMP/RMP Opinion, NMFS (1997b) and in NMFS (1997c). Environmental baseline conditions in the Umpqua Basin are discussed in Johnson et al. (1994), pages 2-7 of NMFS (1997c) and pages 13-14 of the LRMP/RMP Opinion. Cumulative effects as defined under 50 CFR 402.02 are discussed for the Umpqua Basin on pages 40-43 of the NMFS LRMP/RMP Opinion. These respective analyses are incorporated herein by this reference. NMFS is not aware of any newly available information that would materially change these previous analyses of biological requirements, environmental baseline or cumulative effects for the purpose of this Opinion. Some general biological information is provided below.

UR cutthroat inhabit the Umpqua River Basin of southwest Oregon. The Evolutionarily Significant Unit (ESU) consists of resident, potamodromous, and anadromous life histories. Individuals of all three forms have the potential to inhabit the Little River watershed. UR cutthroat are known to be year-around inhabitants (using rearing, feeding, spawning, and incubation habitat) of the subject watershed and the Little River is and its tributaries are likely used as migration corridors by both adults and juveniles of the ESU. Historically, adult anadromous cutthroat trout passed Winchester Dam (on the North Umpqua River) predominantly from late June through November, with peaks in mid-July and mid-October, while juvenile outmigration is thought to occur chiefly from March through October (Johnson et al. 1994).

OC coho are an anadromous species which typically have a three-year life-cycle and are found in the Little River watershed. Adults spawn in the late fall and winter, with fry emergence occurring the following spring. Juvenile coho salmon rear for about a year in natal streams and then outmigrate to the ocean as smolts in the spring. Some male coho return to freshwater to spawn the fall and winter of the same year as their smolt migration, but the majority of adult OC coho do not return to spawn until having spent about 18 months in the ocean. Thus, an active OC coho stream would be used for some life-stage (as rearing, feeding, spawning, and incubation habitat) year-round.

The UNF's Watershed Analysis (NURD and BLM 1995) documents that the Little River watershed as a whole provides about 48 miles of habitat for anadromous fish and another 70 miles of resident fish habitat. Although general information about the populations of UR cutthroat and OC coho within the Little River watershed is available (e.g., those streams likely inhabited), specific information on the size and health of anadromous fish populations in the Umpqua Basin is often lacking or incomplete. Because of the general paucity of the type of knowledge which would allow the UNF and NMFS to assess the relative health of anadromous salmonid populations on a stream or watershed scale, and the fact that all fish species, populations, and individuals depend on adequate habitat, the NMFS uses a habitat-based system in ESA consultation on land-management activities (NMFS 1997d). The NMFS has applied the concept of Properly Functioning Condition (PFC) to assess the quality of the habitat that fish need to survive and recover. This concept is discussed in the next section.

Site-specific environmental baseline descriptions and effects determinations were made by UNF personnel for the proposed timber sale. This information is found in the project-level (sixth and seventh field HUC) Matrices of Pathways and Indicators (MPIs) which were included in the BA. In addition, watershed-level information on UR cutthroat and OC coho habitat is provided in a fifth field MPI (also included in the BA). The NMFS concurred with these project and watershed-scale environmental baseline descriptions and effects determinations in the streamlined consultation process and NMFS considered them in addition to the broad scale analysis conducted for the LRMP/RMP Opinion described above.

Evaluation of Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by the consultation regulations (50 C.F.R. 402). NMFS (1997a) describes how NMFS applies the ESA jeopardy and destruction/adverse modification of critical habitat standards to consultations for Federal land management actions in the Umpqua River basin.

As described in NMFS (1997a), the first steps in applying the ESA jeopardy standards are to define the biological requirements of UR cutthroat and OC coho and to describe the species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how the proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in NMFS 1997c). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area, which is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). If the net effect of the activities is found to jeopardize the listed species, then NMFS must identify any reasonable and prudent alternatives to the proposed action.

Biological Requirements. For this consultation, NMFS finds that the biological requirements of UR cutthroat and OC coho are best expressed in terms of current population status and environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the species. The NMFS defines this "properly functioning condition" (PFC) as the state in which all of the individual habitat factors operate together to provide a healthy aquatic ecosystem that meets the biological requirements of the fish species of interest. Individual, measurable habitat factors (or indicators) have been identified (e.g., water temperature, substrate, etc.) and the "properly functioning" values for these indicators have been determined using the best information available. These indicators, when considered together, provide a summary of the conditions necessary to ensure the long-term survival of aquatic species.

The NMFS has assembled a set of these indicators in a form called the Matrix of Pathways and Indicators (MPI, NMFS 1996). The MPI is a table that lists several categories or "pathways" of essential salmonid habitat, such as water quality, instream habitat elements, and flow/hydrology. Under these pathways are quantitative habitat indicators for which ranges of values are identified that correspond to a "properly functioning" condition, an "at risk" condition, and a "not properly functioning" condition. Because these habitat measurements are more readily available than quantitative measurements of biological variables such as incubation success, standing crop, and growth rate, the NMFS and UNF are able to assess the health of stream reaches or watersheds based on the condition of their component indicators. Such an assessment provides a baseline description of the health of the stream/watershed and also allows the effects of an action (e.g., timber harvest) to be evaluated.

Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of the listed species. It follows, then, that the NMFS has determined that an action which would cause the habitat indicators of a watershed to move to a degraded condition or one which further degrades a "not properly functioning" watershed is also likely to jeopardize the continued existence of the listed species.

In addition to the use of the MPI at the watershed level to assist in making "jeopardy" determinations in Section 7 consultations (especially for land management agencies), the NMFS also uses the MPI at the site or project scale. Assuming that a Federal agency determines that an action is a "may affect," either informal or formal consultation is required. To assist in this determination, the action agency prepares a project-level MPI. If no "degrades" occur at this scale, then the action is probably not likely to adversely affect individuals of a listed species and an informal Section 7 consultation is appropriate. If the proposed action degrades any of the indicators at this smaller scale (often the sixth or seventh field HUC), then the action is generally considered to be a "likely to adversely affect" and formal consultation must occur.

Current range-wide status of listed species under environmental baseline. NMFS described the current population status of the UR cutthroat in its status review (Johnson et al. 1994) and in the final rule (August 9, 1996, 61 FR 41514). Critical habitat for UR cutthroat was designated by the NMFS on January 9, 1998 (63 FR 1338). NMFS also described the current population status of OC coho in a status review (Weitkamp et al. 1995) and in the final rule (August 10, 1998, 63 FR 42587). The recent range-wide status of both these species is summarized in NMFS (1997c).

Current status of listed species under environmental baseline within the action areas. As noted above, the "action area" includes all areas directly or indirectly affected by the proposed action. The general action area can be defined as the Little River watershed.

As noted above, UR cutthroat and OC coho use the action areas as rearing, feeding, spawning, and incubation habitat, as well as a migration corridor. The environmental baseline of the action area is dominated by conditions rated largely as "not properly functioning" (see watershed MPI in BA). These conditions are likely primarily the result of past forest management and agricultural practices, in particular, timber harvest/clearing within riparian zones, large-scale clear-cut timber harvest, road construction (especially within riparian zones), and timber yarding in riparian zones and streams.

Indicators particularly at issue in this consultation are those which would likely be degraded by the proposed actions at the project scale, although the NMFS has also reviewed the UNF's "maintain" and "restore" effect determinations. In this case "sediment/turbidity" was determined to be degraded at the project scale by the action in both the Upper Little River and Upper Emile HUCs, as was "disturbance history" and "RR." On the watershed scale, the environmental baseline for all three of the indicators that would be degraded at the project scale was listed as "not properly functioning."
Based on the best information available on the current status of UR cutthroat and OC coho (NMFS

1997c), NMFS assumptions given the information available regarding population status, population trends, and genetics (NMFS 1997a) and the relatively poor environmental baseline conditions within the action area (see MPIs in BA and UR cutthroat and OC coho final listing rules), NMFS finds that the environmental baseline does not currently meet all of the biological requirements for the survival and recovery of the listed species within the action area. Actions that do not retard attainment of properly functioning aquatic conditions when added to the environmental baseline are necessary to meet the needs of the species for survival and recovery.

Analysis of Effects

The effects determinations in this opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting the effects of the actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This assessment method (in which MPIs are assembled by action agency biologists) was designed for the purpose of providing information in a tabular form for NMFS to determine the effects of actions subject to consultation.

The UNF uses the MPI to make project-level effects determinations: whether an action is "not likely to adversely affect" or "likely to adversely affect" (LAA) the ESA-listed species (in this case, UR cutthroat and OC coho). If any of the indicators is thought to be degraded at the project level by the action, the action is determined to LAA. In turn, if a project was determined to LAA the ESA-listed species, then, based on the "jeopardy" standard delineated in the LRMP/RMP Opinion, the UNF must determine whether the project, when combined with the environmental baseline for the watershed over the long-term, is consistent with the ACS of the NFP. This "consistency" is condensed to a two-part test in the LRMP/RMP Opinion (NMFS 1997a, page 14): Is the proposed action in compliance with the standards and guidelines for the relevant land allocation, and does the proposed action meet all pertinent ACS objectives? This determination is made with the assistance of the MPI at the watershed scale.

Project-Level Effects. The UNF-provided MPIs for the effects of action are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area affected by the proposed timber sale (Upper Emile and Upper Little River) in both the EIS and the ACS consistency review. The results of the completed checklists for the proposed action provide a basis for determining the effects of the action on the environmental baseline in the project area. In general, the UNF determined the actions would not degrade indicators at the project level chiefly because of the maintenance of most of the riparian zones and because of the small total harvest acreage. The project-level MPIs in the EIS and ACS consistency document have slight differences. These are explained below.

As noted above, the UNF found that on the project level the "sediment/turbidity," "disturbance history," and "RR" indicators would be degraded as a result of Little River DEMO. The UNF also found that all

other indicators would be maintained, except for "road density." In the ACS consistency document, but not in the EIS, the "drainage network," and "peak/base flows" indicators were listed as "restores." The UNF attributes the "degrade" checkmark for "sediment/turbidity" to a transitory increase in stream sedimentation due to the short-term cumulative effects of soil disturbance and surface erosion from log yarding, as well as road stormproofing and decommissioning. The transmission of substantial amounts of sediment into stream channels due to ground-disturbing activities should be minimized or prevented by the relatively light-impact nature of helicopter yarding, RR buffers (especially where intact), and/or road construction/maintenance techniques ("Best Management Practices"). The intermittent stream headwall that would be harvested in Unit 2 is not believed to be at risk of failure, based on the opinion of an interdisciplinary team after a site visit (Personal communication, Barbara Fontaine, Resource Planner, NURD, 12/15/98).

The UNF attributes the "degrade" checkmark for "disturbance history" to the harvest of old-growth timber. According to the Little River DEMO EIS and Little River WA (NURD and BLM 1995), 52% of the 3,880-acre Upper Emile seventh field HUC has been harvested; 35% of the 10,406-acre Upper Little River sixth field HUC has also been harvested. Conservatively assuming the full 32-acre area of each of the harvest units would be affected by the proposed project, Little River DEMO would therefore raise the amount of harvested area in Upper Emile to about 55% and in Upper Little River to about 35.3%. This is an overstatement of the actual harvest impact, in that substantial amounts of timber will remain in Units 2, 3, and 4.

Also related to the "disturbance history" indicator is the relationship between timber harvest/canopy cover and the rate of storm runoff and resultant peak flows in stream channels. During rain-on-snow events, snow in and under the canopy tends to melt less quickly than snow on the ground that is subject to direct contact by warm wind and rain. UNF hydrologists use the hydrologic recovery percentage (HRP) model as an indicator of recovery for stream systems and to predict the reduction of recovered stands. The HRP model assumes that values greater than 75% will maintain the existing hydrologic condition, water quality, and fish habitat by limiting peak flow increases during rain-on-snow events. The decrease in canopy cover that would be caused by the proposed harvest is expected to be short-term and not hydrologically significant on the project scale, because the HRP for Upper Little River would be maintained at 81%, and would decrease from 87% to 85% for the Emile sixth-field HUC (existing HRP for the Upper Emile seventh field HUC has not been calculated by the UNF, but is believed to exceed the value for the Emile sixth field HUC [Personal communication, Barbara Fontaine, Resource Planner, NURD, 12/10/98]). The helicopter landing sites would each occur in previously cleared and/or hardened areas remote from RR, and further preparations and use of the sites should have little or no effect on canopy cover or other factors relevant to riparian or in-stream habitat. The likely hydrologic effects of the proposed timber harvest on the Little River watershed is provided in the "Watershed-Level Effects" section, below.

The degrade checkmark for "RR" is attributed to the proposed harvest of timber in the Upper Emile (14.6 acres) and Upper Little River (2 acres) RR. Little River DEMO would increase the proportion

of harvested RR from 43% to about 45% in Upper Emile and from 31% to about 31.2% in Upper Little River. Much of the previous RR harvest in these HUCs, especially in the Upper Emile seventh field HUC, occurred more than 25 years ago [Personal communication, Steve Hofford, Hydrologist, UNF, 12/15/98]), so second-growth vegetation is providing some of the attributes (shade and allochthonous input, for example) of the previously harvested stands. Most of the proposed RR timber harvest would occur in the upper reaches of intermittent streams, while a no-cut buffer will be provided near Emile Creek in Units 3 (75-80 feet) and 5 (45-50 feet). Upper Emile Creek does not provide habitat to anadromous fish (because of a waterfall about 5 miles downstream of Unit 5) and is inhabited by non-native brook trout. No increase in summer water temperature is likely to occur as a result of the proposed RR harvest, because the intermittent streams that would be affected do not flow during this period (and would therefore not be subject to increased solar radiation), while the perennial stream (Emile Creek) is shaded by a dense thicket of willows that would not be disturbed. The RR area that would be harvested in Unit 2 is about 5 miles upstream of the nearest anadromous fish habitat. The UNF believes that sedimentation caused by harvest-induced bank instability should not occur in Unit 3 because instability would be prevented by the no-cut buffer, in Unit 5 because of the no-cut buffer and because of site-specific conditions, and in Unit 6 because the harvest would occur only at the edge of a RR. In Units 2 and 4, the UNF believes that a small amount of sediment may enter the intermittent stream channels because of harvest of streamside trees, but the effect should not be detectable at the sixth field scale.

Regarding the "restore" determination for the "road density" indicator, the UNF calculates that the 7 miles of road decommissioning proposed as part of Little River DEMO would decrease the road density in the Upper Emile seventh field HUC from 5 miles/mile^2 to 4.5 miles/mile^2 and in the Upper Little River sixth field HUC from 5 miles/mile^2 to 4.4 miles/mile^2. In addition, five of 28 stream crossings in Upper Emile would be removed, as well as 16 of 41 stream crossings in Upper Little River. While the road treatments are certainly restorative in nature, densities in the HUCs would remain high, and therefore would not move the "not properly functioning" baselines to the "at risk" condition (Attachment 3, Table 2 in the RMP/LRMP Opinion requires movement from a lesser to a greater baseline condition for a "restore" determination). Similarly, the NMFS does not believe that "drainage network" or "peak/base flows" would be restored at the project level, although progress would be made towards restoration.

Because of the presence of the "degrade" checkmarks on the project scale, the UNF determined that Little River DEMO is likely to adversely affect UR cutthroat trout. The NMFS concurs with the UNF on this project-level effects determination.

Watershed-Level Effects. In the BA, the UNF provided watershed-scale MPIs and an ACS consistency review for the proposed action. One watershed scale MPI was provided as a part of the ACS consistency finding, while the other was a separate document included in the BA. The watershed-scale MPIs evaluate the effects of the proposed action on habitat indicators in the fifth field HUC relative to the long-term environmental baseline. While many actions, including those that may be

beneficial in the long-term, have short-term, small-scale adverse effects, only those actions which would adversely affect the environmental baseline over an entire watershed over a long period would receive a "degrade" checkmark. It is important to realize that both active and passive restoration activities contribute to the environmental baseline. In particular, the passive restoration that will occur over the long-term (defined as at least a decade), especially in RRs, is a principal component of the watershed recovery aspect of the NFP. The role of RRs, LSRs, etc., in restoration of watersheds is described in the NFP ROD (USDA and USDI 1994) and in the LRMP/RMP Opinion (NMFS 1997b).

The ACS consistency review includes a description of how the proposed project compare to the applicable NFP standards and guidelines (S&Gs) for the listed ESUs and how the proposed projects complied with the nine ACS objectives for those ESUs. Because there is strong correspondence between the habitat indicators of the MPI and the ACS objectives, it is likely that if none of the habitat indicators in the watershed level MPI is degraded by an action, then compliance with ACS objectives for the ESUs is also achieved. In the descriptions below, only those MPI habitat indicators which were determined to "degrade" at the sixth or seventh field HUC are discussed ("restores" were also recorded for several indicators in the MPI provided with the ACS review, but our non-concurrence with these determinations are discussed under "Project-Level Effects"). Similarly, the S&Gs and ACS objectives which may be of issue are noted. Whether discussed below or not, information on all of the habitat indicators, relevant S&Gs, and ACS objectives was provided in the UNF's BA and was considered in our analysis.

Little River ERFO is proposed for the Little River watershed, which is a non-Key Watershed under the NFP. The watershed is also an Adaptive Management Area, a NFP land allocation intended to "...develop and test new management approaches to integrate and achieve ecological and economic health, and other social objectives" (USDA and USDI 1994). For this action, the UNF determined that all of the habitat indicators would be maintained at the watershed scale, despite the project-level "degrades" which were recorded in the Upper Little River and Upper Emile HUCs. As noted under the "Project-Level Effects" section, above, the "sediment/turbidity" indicator was thought to be degraded due to harvest and road-related actions such as stormproofing and decommissioning. In the long-term and on the watershed scale, however, this "degrade" was not thought to be consequential, because of its short-term and highly localized nature. Proper stormproofing, in fact, is likely to diminish the adverse effects of roads by allowing the drainage design features to work properly. Decommissioning, especially in the RR, should be an even more beneficial action.

Regarding "disturbance history," although the five harvest units in Little River DEMO total 160 acres, only about 120 of those acres would be harvested (the remainder would be in "leave" areas). The harvest prescription proposed on about 55 of those 120 acres would result in essentially no canopy cover in the short-term, as the 2.6 large trees per acre would be killed to provide snags, and the non-merchantable timber would be sparse. On 32 acres, a 15% dispersed retention harvest would provide about 15% canopy cover, while about 40% canopy cover would remain in the 32 acres of 40% dispersed retention. Taken together, the reduction in canopy cover on these 120 acres in the nearly

132,000 acre watershed would amount to about 0.09%. As noted above, the helicopter landings have little or no canopy component. Therefore, Little River DEMO should have a minimal effect on hydrologic recovery of the watershed because of the relatively small area to be harvested and because the proportion of the Little River watershed that is fully hydrologically recovered is expected to grow to 86% in the next decade from the current 76% (BLM 1998). In addition, the amount of road mileage in the watershed would be slightly reduced, and an additional small amount of road mileage would be hydrologically improved.

During the next decade, other timber sales on Federal land will be proposed, but a minimum of 25% of the Federal forest land in the Little River watershed will be protected as RR (the actual proportion of RR in the watershed is actually substantially higher, because much of the RR protecting intermittent streams has not been incorporated into the database). Because at least a quarter of the Federal forest land in the watershed (the most important portion, from an anadromous fish viewpoint) will be substantially protected from non-restorative activities, if relatively small amounts of regeneration harvest, etc. are proposed for non-RR lands, these actions should not retard the recovery of the watershed as a whole.

The UNF Level 1 team, in a July 2, 1998 memorandum, stated that some of the team did not feel that Little River DEMO would be consistent with the ACS. In particular, the memorandum stated that some of the S&Gs would be violated, and that RR harvest did not appear to be supported by the Little River WA. Some team members were also concerned that the proposed activities, when considered with the environmental baseline and other proposed actions in the watershed, might impede watershed recovery.

Specifically, the Level 1 team unanimously agreed (as did the UNF) that Little River DEMO is in conflict with S&G TM-1, which requires that any timber harvest within RR be restorative in nature. However, S&G RS-1 allows some research activities to proceed even if the activities would not otherwise be consistent with one or more other S&Gs. The Level 1 team did not unanimously agree that RS-1 was relevant to Little River DEMO, however. Additionally, the Level 1 team memorandum stated that the proposed action, as described in the UNF's analysis, appeared to violate S&G WR-3, which prohibits the use of mitigation or planned restoration as a substitute for habitat degradation. Regarding consistency of Little River DEMO with the Little River WA, the Level 1 team felt that while the research project was mentioned in connection with mid-seral stands, it did not appear to comport with a separate WA recommendation to protect late-seral stands. Finally, the Level 1 team pointed out that the Little River watershed is dominated by "not properly functioning" indicators, and that further degradation of RR, however slight, should not occur, nor should road decommissioning be performed as mitigation for RR timber harvest. The team also questioned the rate of passive restoration in the watershed and the cumulative effects of other ongoing, proposed, and foreseeable actions.

The UNF Level 2 team responded to the Level 1 team's elevation of the UNF's ACS Consistency review in a September 21, 1998 letter, concluding that Little River DEMO would not prevent attainment of the ACS. Specifically, the Level 2 team concluded that S&G RS-1 was relevant to the proposed action (and would therefore supersede S&G TM-1) because the DEMO project is clearly a major on-going component of the NFP and because some of the research would include a terrestrial RR component. In addition, the Level 2 team notes that the Regional Ecosystem Office had evaluated and approved the research. The Level 2 team also found that S&G WR-3 is not pertinent to Little River DEMO, in that the road stormproofing/decommissioning is not intended to mitigate for the timber harvest, but is described primarily to document the cumulative effects of all the actions associated with the project. Regarding consistency with the Little River WA, the Level 2 team points out that the WA recommends the implementation of the DEMO project, and discourages "second-guessing" of project details. Finally, the Level 2 believes that the passive restoration occurring in the watershed is obvious and significant, and that cumulative activities were adequately addressed.

Based on the EIS, ACS Consistency review, and communications between the UNF Level 1 and Level 2 Streamlined Consultation Teams for the proposed Little River DEMO timber sale in the Little River watershed, it appears that the violation of S&G TM-1 is justified under S&G RS-2, and that all of the other relevant S&Gs would be observed. Compliance with the nine ACS objectives would also likely be achieved.

Effects Summary. NMFS has considered the applicability of these analyses to each of the actions identified in the BA and in this letter. The NMFS is not aware of any other special characteristics of the particular sales that would cause greater or materially different effects on the subject salmonid species and their habitat than is discussed in these references. Similarly, NMFS is not aware of any newly available information that would materially change these previous effects analyses. In addition, while a portion of Little River watershed is privately-owned, the NMFS assumes that the cumulative effects of non-Federal land management practices will continue at similar intensities as in recent years (LRMP/RMP Opinion, pg. 41-42, NMFS 1997b).

The effects of the actions on UR cutthroat and its habitat are presented in the BA prepared by the UNF, specifically in the project and watershed-level MPIs and ACS Consistency reviews, and EIS. NMFS finds those descriptions to be adequate for this analysis. Based on this information, the NMFS does not consider these actions to be likely to result in more effects than expected or considered in the LRMP/RMP Opinion (1997b). In particular, the UNF determined, and the NMFS concurred, that relevant NFP S&Gs would be followed and that ACS objectives would be met at the watershed scale and over the long-term when the effects of the proposed timber sale are combined with the environmental baseline. This ACS consistency determination was made because the UNF showed that, despite the potential short-term adverse effects of their proposed actions, watershed habitat indicators would be maintained over the long-term.

The NMFS expects that ACS objectives which may be affected by the subject actions will be met for the following reasons: (1) potential sediment input from proposed road decommissioning and stormproofing will be minimized by implementation of appropriate Best Management Practices (specific procedures that minimize the adverse environmental effects of activities) and the long-term effects of these actions should be beneficial because of lessened sediment and hydrologic effects from existing and former roads; (2) a small proportion of the proposed timber harvest will occur within RR, but is not likely to contribute a substantial amount of sediment because of the yarding method, and should not affect water temperature because the streams involved are intermittent or will be protected by no-cut buffers and shrubby vegetation (otherwise, no vegetation treatments or timber harvest will occur in RR); (3) the amount of canopy cover removed in the timber sale would be small compared to the passive restoration which will occur in the watershed over the long-term and should not impair recovery of the watershed. Despite the minor, short-term adverse effects, these actions maintain or restore essential habitat functions and will not impede recovery of salmonid habitat, which is a long-term goal of the NFP.

Section 7(a)(2) Determinations

The NMFS concludes that, when the effects of these proposed site specific actions are added to the environmental baseline and cumulative effects occurring in the relevant action areas, they are not likely to jeopardize the continued existence of UR cutthroat trout, OC coho salmon, or OC steelhead trout.

Additionally, the NMFS concludes that the proposed actions would not cause adverse modification or destruction of UR cutthroat critical habitat. This is because our "no jeopardy" conclusion is based on the effects of the actions on UR cutthroat habitat and because the "adverse modification or destruction of habitat" standard is defined similarly to the "jeopardy" standard. Because we have determined that the actions would not jeopardize the continued existence of UR cutthroat, it follows that UR cutthroat critical habitat would not be adversely modified or destroyed.

In reaching these conclusions, NMFS has utilized the best scientific and commercial data available as documented herein and by the BA and documents incorporated by reference.

Incidental Take Statement

Effects resulting from timber harvest, yarding, and road-related activities are expected to be the sources of incidental take associated with the proposed timber sale covered by this Opinion. Because of the implementation of appropriate mitigation measures for these activities, impacts are expected to be minimized.

Adverse effects of management actions such as these are largely unquantifiable in the short-term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, even though the NMFS expects some low level of incidental take to occur due to the action, the best

scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species themselves.

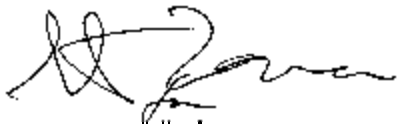
The incidental take statement in the LRMP/RMP Opinion (NMFS 1997b) provided reasonable and prudent measures and terms and conditions to avoid or minimize the take of listed salmonids from beneficial road-related actions (pages 64 and 70) that may be applied to site-specific actions, if appropriate. NMFS hereby applies the findings, reasonable and prudent measures, and terms and conditions set forth in the Incidental Take Statement of the programmatic LRMP/RMP Opinion (NMFS 1997b) to the relevant site-specific actions.

Conclusions

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). The UNF must reinitiate this ESA consultation if: (1) the amount or extent of taking specified in the incidental take statement above, is exceeded; (2) new information reveals effects of the action that may affect listed species in a way not previously considered; (3) the action is modified in a manner that causes an effect to the listed species that was not previously considered; or (4) a new species is listed or critical habitat designated that may be affected by identified action.

If you have any questions, please contact Dan Kenney of my staff at (541) 957-3385.

Sincerely,



William Stelle, Jr.
Regional Administrator

References

Bureau of Land Management, Roseburg District (BLM). 1998. Biological assessment on proposed timber sales. Roseburg, Oregon. August 14, 1998.

Johnson, O.W., R.S. Waples, T.C. Wainwright, K.G. Neely, F. W. Waknitz, and L. T. Parker. 1994. Status review of Oregon's Umpqua River sea-run cutthroat trout. National Marine Fisheries Service, Coastal Zone and Estuarine Studies Division, Seattle, Washington.

National Marine Fisheries Service (NMFS). 1996. Making Endangered Species Act determinations of effect for individual or grouped actions at the watershed scale. NMFS, Northwest Region, Seattle, Washington. August 1996.

National Marine Fisheries Service (NMFS). 1997a. Application of Endangered Species Act standards to: Umpqua River cutthroat trout, Oregon Coast coho salmon, Southern Oregon/Northern California coho salmon, Oregon Coast steelhead, Klamath Mountain Province steelhead, Lower Columbia steelhead, chum salmon, chinook salmon, and sea-run cutthroat trout. NMFS, Northwest Region, Seattle, Washington. February, 1997.

National Marine Fisheries Service (NMFS). 1997b. Biological Opinion and Conference Opinion on Implementation of Land and Resource Management Plans (USFS) and Resource Management Plans (BLM) on the Oregon Coast. NMFS, Northwest Region, Seattle, Washington. Biological Opinion and three attachments. March 18, 1997.

National Marine Fisheries Service (NMFS). 1997c. Biological requirements and status under 1996 environmental baseline: Umpqua River cutthroat trout, Oregon Coast coho salmon, Oregon Coast steelhead, Southern Oregon/Northern California coho salmon, Klamath Mountain Province steelhead, Lower Columbia steelhead, and chum salmon. NMFS, Northwest Region, Seattle, Washington. September, 1997.

NURD (North Umpqua Ranger District) and BLM (Roseburg BLM). 1995. Little River watershed analysis. Umpqua National Forest, Glide, Oregon, and Roseburg Bureau of Land Management, Roseburg, Oregon. September 1995.

United States Department of Agriculture and United States Department of the Interior (USDA and USDI). 1994. Record of Decision for amendments to Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl. Washington, D.C. April 13, 1994.

Weitkamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington.